
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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ZINC IN SEPTEMBER 1997

Domestic mine production in September, expressed in content of concentrate, increased by more than 6% over the previous month's production, and by more than 13% over that of September 1996. Smelter production in September was slightly lower than production in August and that of a year ago. Apparent consumption increased by nearly 8% but was 8% lower than in September 1996.

The *Platt's Metals Week* composite price for North American Special High Grade zinc declined by less than 1%, a slight decrease from the previous month's price; but a large, 53%, increase over that of September 1996.

Additional drilling by joint venture partners Westmin Resources Limited (60%) and Atna Resources (40%) reportedly has increased the reserves of the Wolverine polymetallic deposit in the southeastern Yukon Territory, Canada, to 5.3 million tons grading 13% zinc, 1.5% lead, 1.4% copper, 359 grams of silver, and 1.8 grams of gold per ton of ore (Mining Magazine, 1997a).

Canada's Breakwater Resources Ltd. has agreed to buy a 60.3% interest in Minera S.A. for \$91 million. Minera S.A. is one of the largest privately-owned zinc producers in South America. Through its wholly owned subsidiaries, Minera controls seven operations, including four zinc mines in Bolivia and a zinc mine and smelter in Argentina. In addition, it has a number of exploration properties in Bolivia. In the last fiscal year, ending Sept. 30, 1996, it produced 129,261 tons of zinc in concentrate and 35,288 tons of zinc metal. Breakwater has also acquired all of the assets of Société Minière de Bougrine S.A. for \$19.3 million. These include the mine, concentrator, and additional infrastructure in Tunisia. The mine reportedly has 4 million tons of reserves grading 10.8% zinc and 2.2% lead (Metal Bulletin, 1997a). When the Bougrine Mine resumes operation in early 1998, Breakwater will have nine operating zinc mines located in six countries with a combined production capability of about 350,000 tons of zinc in concentrate (Breakwater Resources Ltd., 1997).

On August 27, the Queensland Government passed the

Century Zinc Project Bill, granting Melbourne-based Pasminco Mining the right to develop the Century deposit, located in the Gulf of Carpentaria, north Queensland, Australia. Proven reserves reportedly amount to 116 million tons grading 10.2% zinc. The \$888 million development should be completed by late 1999. The mine is expected to produce 780,000 tons of low-iron zinc and silver concentrate for Pasminco's Budel smelter in the Netherlands and about 70,000 tons of lead concentrate per year. As part of the Century purchase, Pasminco completed the acquisition of the Dugal River zinc-lead-silver project from Rio Tinto, sale of which was contingent on the Government's permission to proceed with development of the Century Mine (Platt's Metals Week, 1997).

Zinc Corporation PLC of the United Kingdom, through its Peruvian subsidiary, Zinc Corporation del Peru S.A., signed an agreement with Compañía Minera San Valentin S.A. to build the first commercial-scale Warner plant at San Valentin's zinc mine. The new process is expected to increase metal recovery from 50% to about 90% while reducing soil pollution and virtually eliminating gas emissions. San Valentin, which has a 40% interest in the project, will initially supply 25,000 tons of zinc concentrate and will subsequently increase it to 50,000 tons per year. Construction should start at the beginning of 1998 (Mining Magazine, 1997b).

Empresa Minera del Centro del Peru S.A. (Centromin) is to complete the transfer of the two Mahr Túnel mines on October 1 to Compañía Minera Volcán S.A. The Mahr Túnel zinc-lead-silver complex consists of the San Cristobal and Andaychagua mines, 120 kilometers east of Lima, in Yauli Province. Combined production of the two adjacent mines in 1996 was 1.1 million tons of ore yielding 36,800 tons of zinc in concentrate (Metal Bulletin, 1997b).

Recent drilling at the Lisheen zinc-lead project, 12 kilometers from Rhurles in County Tipperary, Ireland, has increased the reserves by 7%, which now reportedly stand at 19 million tons grading 12.7% zinc and 2.2% lead. In spite of extensive

drilling, which brought about 70% of reserves into the proven and probable categories, the deposit remains undelineated in a number of directions. The deposit is jointly owned by Ireland's Invernica West Plc of Limerick and Minorco SA (Mining Journal, 1997).

References Cited

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- 1997b, Zinc Corp to build 50,000 t/y Warner plant in Peru: Mining Magazine, August, v. 177, no. 2, p. 142.
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TABLE 1
SALIENT ZINC STATISTICS 1/

(Metric tons)

	1996			1997			
	September	Jan.-Sept.	Jan.-Dec.	July	August	September	Jan.-Sept.
Production:							
Mine, zinc content of concentrate	49,000	467,000	628,000	48,100	52,200	55,500	455,000
Mine, recoverable zinc	46,800	446,000 r/	600,000	45,900	49,800	53,000	434,000
Smelter, refined zinc	30,800	271,000	366,000	32,500	30,800 r/	30,700	284,000
Oxide (gross weight)	12,500 r/	116,000 r/	156,000	13,900 r/	13,700 r/	14,200	123,000
Consumption:							
Refined (zinc, reported)	54,400 r/	497,000 r/	788,000	45,100 r/	45,500 r/	50,600	422,000
Ores e/ (zinc content)	150 r/	1,350 r/	1,800	150	150	150	1,350
Zinc-base scrap e/ (zinc content)	8,300 r/	74,700 r/	100,000	8,300	8,300	8,300	74,700
Copper-base scrap e/ (zinc content)	14,000 r/	126,000 r/	170,000	14,000	14,000	14,000	126,000
Aluminum- and magnesium-base scrap e/ (zinc content)	67 r/	603 r/	800	67	67	67	603
Total e/	76,900 r/	700,000 r/	1,060,000	67,600 r/	68,100 r/	73,100	625,000
Apparent consumption, metal 2/	122,000 r/	883,000 r/	1,210,000	117,000 r/	104,000 r/	112,000	993,000
Stocks of refined (slab) zinc, end of period:							
Producer 3/	9,600 r/	XX	XX	11,100	12,300 r/	11,300	XX
Consumer 4/	58,700 r/	XX	XX	56,600 r/	57,600 r/	55,300	XX
Merchant	4,130	XX	XX	5,710	6,250	5,380	XX
Total	72,500 r/	XX	XX	73,500 r/	76,200 r/	72,000	XX
Shipments of zinc metal from Government stockpile	2,550 r/	9,780	16,500	860 r/	3,340 r/	1,490	29,200
Imports for consumption:							
Refined (slab) zinc	88,200	599,000	827,000	85,400	73,300	NA	607,000 5/
Oxide (gross weight)	4,820	43,100	56,300	4,980	4,590	NA	41,400 5/
Ore and concentrate (zinc content)	2,310	8,700	15,100	--	3,100	NA	21,200 5/
Exports:							
Refined (slab) zinc	191	1,520	1,970	178	763	NA	2,420 5/
Oxide (gross weight)	397	4,540	5,770	635	403	NA	3,610 5/
Ore and concentrate (zinc content)	35,000 r/	258,000	425,000	152,000	38,500	NA	271,000 5/
Waste and scrap (gross weight)	2,990	35,500	45,500	4,080	4,490	NA	35,300 5/
Price:							
London Metal Exchange, average, per metric ton	\$1,000.64	\$1,023.95	\$1,025.03	\$1,517.96	\$1,653.51	\$1,640.89	\$1,359.79
Platt's Metals Week North American Special High Grade, average, ¢ per pound	51.39	50.63	51.11	73.25	79.15	78.47	66.78

e/ Estimated. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

3/ Data from U.S. Geological Survey and American Bureau of Metal Statistics.

4/ Includes an estimate for companies that report annually.

5/ Includes data through August only.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES 1/

(Metric tons)

Month	Beginning stocks 2/	Production	Shipments	Ending stocks 2/
1996:				
Jan.-Sept.	XX	271,000	269,000	XX
September	8,570	30,800	29,900	9,480
October	9,480	32,300	31,600	10,100
November	10,100	32,000	30,300	11,800
December	11,800	31,200	32,300	10,800
Total	XX	366,000	363,000	XX
1997:				
January	10,800	32,700	32,200	11,300
February	11,300	29,300	29,800	10,800
March	10,800	31,300	30,400	11,600
April	11,600	31,900	31,400	12,100
May	12,100	33,300	33,300	12,100
June	12,100	31,600	33,200	10,500
July	10,500	32,500	31,900	11,100
August	11,100	30,800 r/	29,600 r/	12,300 r/
September	12,300	30,700	31,700	11,300
Jan.-Sept.	XX	284,000	284,000	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
ZINC OXIDE PRODUCED 1/ IN THE UNITED STATES 2/

(Metric tons, gross weight)

Month	Beginning stocks	Production	Shipments	Ending stocks
1996:				
Jan.-Sept.	XX	116,000	116,000	XX
September	3,000	12,500	12,200	3,260
October	3,260	13,500	13,500	3,200
November	3,200	13,500	13,500	3,180
December	3,180	13,800	13,500	3,480
Total	XX	156,000	160,000	XX
1997:				
January	3,480	13,000	13,300	3,190
February	3,190	12,200	12,000	3,380
March	3,380	13,400	12,700	4,120
April	4,120	13,600	13,600	4,040
May	4,040	14,100	14,200	3,920
June	3,920	14,500	13,800	4,700
July	4,700	13,900 r/	14,100 r/	4,550 r/
August r/	4,550	13,700	14,300	3,940
September	3,940	14,200	14,600	3,590
Jan.-Sept.	XX	123,000	123,000	XX

r/ Revised. XX Not applicable.

1/ Excludes impure zinc oxide produced from other processes.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
ESTIMATED DISTRIBUTION 1/ OF ZINC OXIDE SHIPMENTS BY INDUSTRY 2/ 3/

(Metric tons, gross weight)

Industry	1996			1997			
	September r/	Jan.-Sept. r/	Jan.-Dec.	July r/	August r/	September	Jan.-Sept.
Agriculture	W	W	W	W	W	W	W
Ceramics	409	4,700	6,180	771	809	668	4,980
Chemicals	2,380	24,100	32,700	3,120	3,040	3,120	26,200
Paints	531	5,160	6,790	567	637	620	5,290
Photocopying	W	W	W	W	W	W	W
Rubber	8,460	80,700	108,000	9,060	9,250	9,590	81,200
Other	444	4,700	6,260	562	556	556	4,850
Total	12,200	119,000	160,000	14,100	14,300	14,600	123,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished.

2/ May include in-house consumption.

3/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 5
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	1996			1997			
	September r/	Jan.-Sept. r/	Jan.-Dec.	July r/	August r/	September	Jan.-Sept.
Galvanizing:							
Sheet and strip	49,800	361,000	494,000	47,200	43,000	45,800	410,000
Other	17,500	114,000	160,000	17,100	14,500	14,900	141,000
Total	67,300	475,000	654,000	64,300	57,400	60,800	551,000
Brass and bronze	17,200	115,000	155,000	15,100	13,700	13,900	132,000
Zinc-base alloy	19,600	153,000	229,000	22,200	16,700	20,400	177,000
Other uses 2/	18,000	141,000	173,000	15,400	16,200	17,000	134,000
Total	122,000	883,000	1,210,000	117,000	104,000	112,000	993,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 6
AVERAGE MONTHLY ZINC PRICES

Month	North American Special High Grade, ¢/lb	LME cash	
		¢/lb	\$/mt
1996:			
September	51.39	45.37	1,000.64
October	51.52	45.50	1,003.46
November	53.31	47.47	1,046.83
December	52.77	47.00	1,036.26
Year average	51.11	46.50	1,025.03
1997:			
January	55.17	49.28	1,086.52
February	59.26	53.50	1,179.38
March	62.69	56.92	1,254.80
April	61.97	56.26	1,240.40
May	64.94	59.44	1,310.51
June	66.12	61.42	1,354.18
July	73.25	68.85	1,517.96
August	79.15	75.00	1,653.51
September	78.47	74.43	1,640.89

Source: Platt's Metals Week.

TABLE 7
U.S. EXPORTS OF ZINC 1/

Material	1996		1997			
			August		Year to date	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	1,970	\$2,350	763	\$901	2,420	\$3,080
Ore and concentrate (zinc content)	425,000	190,000	38,500	27,000	271,000	178,000
Waste and scrap (gross weight)	45,500	30,300	4,490	3,660	35,300	24,500
Powders, flakes, and dust (zinc content)	11,100	21,400	961	2,050	6,330	12,100
Oxide (gross weight)	5,770	9,430	403	507	3,610	6,170
Chloride (gross weight)	1,470	1,230	283	207	1,750	1,270
Sulfate (gross weight)	5,230	2,970	494	320	3,920	2,220
Compounds, other (gross weight)	1,250	4,670	10	39	159	606

NA Not available.

1/ Data are rounded to three significant digits.

Source: Bureau of the Census.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	1996		1997			
			August		Year to date 2/	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	827,000	\$882,000	73,300	\$126,000	607,000	\$792,000
Ore and concentrate (zinc content)	15,100	6,380	3,100	2,670	21,200	11,400
Waste and scrap (gross weight)	31,900	12,800	2,710	1,490	20,800	9,320
Powders, flakes, and dust (zinc content)	10,300	17,600	920	1,880	6,710	13,100
Oxide (gross weight)	56,300	57,500	4,590	5,700	41,400	46,700
Chloride (gross weight)	2,420	2,140	59	41	1,350	888
Sulfate (gross weight)	4,050	2,840	579	363	3,920	2,230
Compounds, other (gross weight)	1,190	1,280	162	218	1,100	1,350

1/ Data are rounded to three significant digits.

2/ Data for the current month were not available at time of publication.

Source: Bureau of the Census.

TABLE 9
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE 1/

(Metric tons)

Month	Beginning inventory	Shipments	Ending inventory
1996:			
September	266,000	2,550	264,000
October	264,000	1,630	262,000
November	262,000	2,810	259,000
December	259,000	2,110	257,000
Total	XX	16,500	XX
1997:			
January	257,000	3,020	254,000
February	254,000	4,400	250,000
March	250,000	5,080	245,000
April	245,000	5,480 r/	239,000
May r/	239,000	3,750	236,000
June r/	236,000	1,750	234,000
July r/	234,000	860	233,000
August r/	233,000	3,340	230,000
September	230,000	1,490	228,000
Year to date	XX	29,200	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 10
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/

(Metric tons)

Material and country	General imports			Imports for consumption		
	1996	1997 2/		1996	1997 2/	
		August	Year to date		August	Year to date
Ore and concentrate (zinc content):						
Australia	--	--	9,930	--	--	9,930
Mexico	7,000	--	5,300	6,970	--	5,300
Peru	10,000	3,560	7,010	8,080	3,100	6,020
Other	322	66	269	91	--	--
Total	17,300	3,620	22,500	15,100	3,100	21,200
Blocks, pigs, or slab:						
Brazil	32,000	2,400	19,500	32,000	2,400	19,500
Canada	503,000	39,100	313,000	503,000	39,100	313,000
Finland	18,300	--	13,000	18,300	--	13,000
Mexico	93,900	8,440	50,100	93,900	8,440	50,100
Peru	23,800	2,000	11,400	23,800	2,000	11,400
Russia	24,100	--	18,800	24,100	--	18,800
Spain	83,200	5,780	73,300	91,400	6,780	84,400
Sweden	--	--	12,500	--	--	3,020
Other	40,500	11,600	90,700	40,900	14,600	93,700
Total	819,000	69,300	602,000	827,000	73,300	607,000
Dross, ashes, & fume (content)	15,800	1,820	11,300	15,800	1,820	11,300
Grand total	852,000	74,700	636,000	858,000	78,200	639,000
Oxide (gross weight):						
Canada	28,600	2,620	21,300	28,600	2,620	21,300
China	2,070	74	2,250	2,070	74	2,250
Mexico	21,400	1,460	13,600	21,400	1,460	13,600
Other	4,420	431	4,310	4,310	431	4,310
Total	56,400	4,590	41,400	56,300	4,590	41,400
Other (gross weight):						
Waste and scrap	31,900	2,710	20,800	31,900	2,710	20,800
Sheets	16,900	703	16,000	16,900	703	16,000
Dust, powder, flakes	10,300	920	6,710	10,300	920	6,710

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data for the current month were not available at time of publication.

Source: Bureau of the Census.